REMARKS/ARGUMENTS

These remarks are made in response to the final Office Action of May 2, 2007 (hereinafter Office Action). As this response is timely filed within the 3-month shortened statutory period, no fee is believed due. Nonetheless, the Examiner is expressly authorized to charge any deficiencies to Deposit Account No. 50-0951.

In the Office Action, Claims 1, 2, 5, 8-21, and 23-29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,122,664 to Boukobza, *et al.* (hereinafter Boukobza). Claims 3, 4, and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Boukobza in view of U.S. Patent 6,419,577 to Okada (hereinafter Okada). Claims 6 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Boukobza in view of U.S. Published Patent Application 2004/0139202 to Talwar, *et al.* (hereinafter Talwar).

Applicants have amended independent Claims 1, 11, 17, and 20 to further emphasize certain aspects of the invention. Applicants also have amended dependent Claims 2 and 18 to maintain consistency among the claims. As discussed in the following section, the claim amendments are fully supported throughout the Specification. No new matter has been introduced by the amendments.

Aspects Of Applicants' Invention

It may be helpful to reiterate certain aspects of Applicants' invention prior to addressing the cited references. One embodiment of the invention, typified by amended Claim 1, is a method for computing within a grid environment. The method can include determining a statistically relevant number of ghost agents in the grid environment. The method also can include modeling delays associated with the statistically relevant number of ghost agents executing ghost software objects that consume limited computing resources in the grid environment. (See, e.g., Specification, para. [0030].) The method

further can include identifying in one grid of the grid environment a host software object, and creating a ghost software object within the one grid. The software object can represent user objects, applications, and/or a process operating in one or more grids within the grid environment. (See, e.g., Specification, para. [0034].) According to the method, the host software object can then be associated with the ghost software object and configured to replicate and record at least one action of the host software object.

The method further can include identifying an interaction between the ghost software object and the host software object. The method also can include identifying passive and active interactions between the ghost software object and the host software object that consume the limited computing resources that induce the delays. (See, e.g., Specification, para. [0047-0048].) Either a transfer of the ghost software object or a cloning of the ghost software object can be triggered in response to identifying the passive and active interactions and the modeled delays. (See, e.g., Specification, para. [0050].)

Upon either the transfer or the cloning, according to the method, the host software object can be moved from the one grid to another grid within the grid environment. A ghost software object, when created, can be configured to record actions of any host object it is associated with as it travels through the grid environment. As the host software object is moved from one grid to another, the ghost software agent can travel with the host software object through the grid environment so as to potentially record all actions of the host software object. (See, e.g., Specification, para. [0029].)

The Claims Define Over The Prior Art

As already noted, independent Claims 1, 11, 17, and 20 were rejected as being anticipated by Boukobza. Boukobza is directed to a process for monitoring object types of a plurality of nodes in an information system. More specifically, Boukobza configures and then distributes monitoring functions in a filtered way from a management node in

the information system to at least one autonomous agent installed on each node to be monitored in the information system.

On Page 2 of the Office Action, it was stated that Boukobza teaches a ghost software object that is configured to replicate and record at least one action of a software object. However, Boukobza does not teach replicating and recording at least one action responsive to identifying passive and active interactions between the ghost software object and the host software object that consume the limited computing resources and induce delays. Boukobza does not teach determining a statistically relevant number of ghost agents in a grid environment, or modeling delays associated with the statistically relevant number of ghost agents executing instructions for ghost software objects that consume the limited computing resources in the grid environment. Furthermore, Boukobza does not teach triggering either a transfer of the ghost software object or a cloning of the ghost software object in view of the passive and active interactions and the induced delays.

As described in Applicants' Specification, each host software object can have an associated ghost agent. The ghost agent can replicate the actions of the host software object and follow the host software object from grid to grid. The actions replicated within the ghost agent can be recorded or logged. (See, e.g., Specification, para. [0029]) The behavior of the grid environment within which the ghost agents operate can be modeled by determining a statistically relevant number of ghost agents operating within the grid environment. (See, e.g., Specification, para [0030].) Modeling the behavior of the grid environment can be performed by identifying ghost software agents executing passive actions (see, e.g., Specification, para [0047]) and active actions (see, e.g., Specification, para [0048]) within the grid environment. As further described in Applicants' Specification, the active actions can affect the operational performance of the grid environment and/or the associated host software agent. The active actions can consume limited resources thereby introducing a delay into the system and potentially

slowing down system response time for the corresponding host software object. (See, e.g., Specification, para. [0048])

Accordingly, a statistically relevant number of ghost agents in the grid environment can be used for modeling delays associated with the statistically relevant number of ghost agents executing instructions for ghost software objects. Upon identifying passive and active interactions between the ghost software object and the host software and based on the modeling of the delays in the grid environment, either a transfer of the ghost software object or a cloning of the ghost software object can be triggered. (See, e.g., Specification, para [0050]). As illustrated by Applicants' FIG. 3 in the Drawings, either a transfer of the ghost software object (308A) or a cloning of the ghost software object (308B) can occur in response to determining the delays introduced in the grid environment that result from consumption of the limited computational resources. As described in Applicants' Specification, a ghost controller can increase the computing resource consumed by a ghost agent, thereby slowing down operational performance in the grid environment. (See, e.g., Specification, para. [0041].) Slowing performance can be beneficial when simulating system load during testing. The ghost controller can either restrict computing resources consumed by ghost agents, thereby freeing up system resources in the grid environment for improved operational performance, or increase the computing resource consumed by ghost agents, thereby slowing down operational performance in the grid environment in view of passive and active interactions between the ghost software and the host software object (See, e.g., Specification, para [0041]).

On Page 4 of the Office Action, it was stated that Boukobza does not disclose a multi-player game system but Okada discloses a computing system wherein the user object represents a player of a distributed multi-player system. Okada is directed a process for player character selection that enables a strategic character selection reserved at a suitable point of time. Although Okada contemplates difficulties with character

reservation systems in a real-time systems across networks, Okada does not contemplate modeling delays associated with a statistically relevant number of ghost agents executing ghost software objects that consume limited computing resources in a grid environment. More specifically, Okada does not contemplate or suggest identifying passive and active interactions by the ghost agents that consume limited computing resources and which induce the delays within the grid environment. Moreover, Okada does not contemplate a triggering mechanism based on evaluating the consumption of limited computing resources that results in cloning of a ghost software object or transfer of the ghost software object to another host object. Okada is silent as to cloning and transfer mechanisms in a grid environment. Therefore it would not be obvious to combine the teachings of Okada with Boukobza to achieve aspects of the claimed invention.

On page 4 of the Office Action, it was acknowledged that although Boukobza does not disclose an authenticating method associated with a software object within a grid. It was stated, however, that Talwar discloses a method of authentication to allow a ghost to enter another grid and replicating a new action within an associated software object. Talwar is directed to a method for grid computing access control in which a command is received from a user, and an authorization of the user to execute the command is verified. In the portion cited (page 1, [0005]) and indeed throughout the reference, Talwar fails to teach or contemplate replicating a new action responsive to identifying passive and active interactions that consume limited computing resources between a ghost software object and a host software object. Talwar further fails to teach or contemplate triggering either a transfer of the ghost software object or a cloning of the ghost software object in view of the passive and active interactions. Talwar also fails to contemplate modeling delays associated with a statistically relevant number of ghost agents executing ghost software objects that consume limited computing resources in a grid environment. Tawlar likewise does not contemplate aspects of ghost object actions that affect operational performance of a grid environment and/or associated host software agents due to

consumption of limited computing resources. Accordingly, Tawlar is not directed to triggering either a transfer of the ghost software object or a cloning of the ghost software object in view of the passive and active interactions for managing resources consumed by the a ghost agent.

Accordingly, none of the references, either alone or in combination, teach or suggest every feature recited in Claims 1, 11, 17, and 20. Applicants respectfully submit, therefore, that Claims 1, 11, 17, and 20 define over the prior art. Applicants further respectfully submit that, whereas each of the other claims depends from Claim 1, 11, 17, or 20 while recited additional features, the dependent claims likewise define over the prior art.

CONCLUSION

Applicants believe that this application is now in full condition for allowance, which action is respectfully requested. Applicants request that the Examiner call the undersigned if clarification is needed on any matter within this Amendment, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,

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